

O'Brian Canal
Adams County, Brighton Vicinity
Colorado

HAER No. CO-46

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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

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HISTORIC AMERICAN ENGINEERING RECORD
O'BRIAN CANAL

Location: The O'Brian Canal is located in Colorado's South Platte River drainage in Water District No. 2, Division No. 1. The canal's headworks, which are jointly utilized by the O'Brian Canal, the Burlington Ditch, and the Denver-Hudson Canal, are located on the South Platte River near the City of Denver. The canal empties into Barr Lake in Adams County, Colorado.

Quads: Commerce City, Sable, and Brighton

Date of Construction: 1910-12

Present Owners: Jointly operated by the Farmers Reservoir and Irrigation Company, Brighton, Colorado; the Henrylyn Irrigation District, Hudson, Colorado; the Burlington Ditch, Reservoir and Land Company, Brighton, Colorado.

Present Use: Agricultural irrigation

Significance: The O'Brian Canal is part of one of the largest irrigation systems in northeastern Colorado, and has served as an integral part of the local farm economy.

Historians: James E. Sherow, R. Laurie Simmons, and Christine Whitacre; Front Range Research Associates, Denver, Colorado; November 1988

INTRODUCTION

Since its completion in 1912, the O'Brian Canal has been an integral part of one of the largest irrigation systems in northeastern Colorado. The O'Brian Canal is jointly operated with the Burlington Ditch and the Denver-Hudson Canal, and serves the operations of the Burlington Ditch, Reservoir and Land Company; the Farmers Reservoir and Irrigation Company (FRICO); and the Henrylyn Irrigation District. The Farmers Reservoir and Irrigation Company, which manages the operations of the O'Brian Canal, is one of the largest irrigation companies in the United States. Although the O'Brian Canal does not directly water farmlands, it is, as a feeder canal, critical to the larger irrigation system.

The history and operations of the O'Brian Canal are closely intertwined with those of the Burlington Ditch and Denver-Hudson Canal. These three ditch systems all draw water from the South Platte River, and share the same headworks (Township 3 South, Range 68 West, Section 14). They also all divert water through the first 5.43 miles of the Burlington Ditch, referred to as the "Enlarged Burlington" or the "Main Burlington."

At the end of the Enlarged Burlington (Township 2 South, Range 67 West, Section 29) a bifurcation structure divides the water flow between the Burlington Ditch and the O'Brian Canal. After the bifurcation, the O'Brian Canal continues to run for another 12.25 miles, eventually feeding into Barr Lake. At a point just upstream from Barr Lake (Township 1 South, Range 66 West, Section 33), a second bifurcation structure divides water between the O'Brian Canal and the Denver-Hudson Canal. The Denver-Hudson Canal, which is owned and operated by the Henrylyn Irrigation District, skirts Barr Lake and continues on to irrigate farmlands in Adams and Weld Counties.

The building of irrigation systems was a major industry in northeastern Colorado, and many of the large irrigation systems were the result of joint operations between several companies. Although the operations of the Burlington Ditch, the O'Brian Canal, and the Denver-Hudson Canal are interwoven, this report deals primarily with the O'Brian Canal. For a discussion of the Burlington Ditch, see HAER report No. CO-45.

GEOGRAPHIC SETTING

The O'Brian Canal is located in Adams County, Colorado, in the South Platte River drainage. The canal line is located within the Beebe Draw, a topographically low area lying between

the South Platte River Valley and the Box Elder Valley. The Beebe Draw is a north-south geological formation paralleling the South Platte River to the east, and is comprised of sandy loams which were once part of the South Platte River alluvium.²

Through the Enlarged Burlington Ditch, the O'Brian Canal draws water from the South Platte River. Near its bifurcation with the Enlarged Burlington, the O'Brian Canal is in an urban environment. As the canal runs in a northeasterly direction towards Barr Lake, the surrounding lands become increasingly agricultural. The final portion of the canal is located within Barr Lake State Park, where the canal flows through a protected eagle nesting area.

ORIGINS IN THE BURLINGTON DITCH SYSTEM

The origins of the O'Brian Canal date to 1885, with the founding of the Burlington Ditch, Reservoir and Land Company. The Burlington company was formed with the intention of building an agricultural irrigation ditch northeast of Denver. In 1887, those plans were strengthened when the Oasis Water Supply Park and Improvement Company--which was incorporated by essentially the same group of men who had founded the Burlington Company--began studying the possibility of building reservoirs in two natural depressions in the area.

By 1888, when the Burlington Ditch was completed, the first Oasis company reservoir was built.³ By 1890, both reservoirs were completed, separated only by a dike. The upper reservoir, Barr Lake, was located in Township 1 South, Range 66 West, Section 27. The lower reservoir, Oasis Reservoir, was in Section 22. As had certainly been their original intent, the Burlington company, on 1 May 1889, entered into a contract with the Oasis company whereby the Burlington company could store Burlington Ditch water in both Oasis company reservoirs.⁴

Although Barr Lake and Oasis Reservoir had a total storage capacity of 10,500 acre feet (af) of water, the Burlington company's engineer, Peter O'Brian, soon began designing a more extensive system which would expand the system's irrigation and storage capabilities. A native of Canada, O'Brian had worked on several public works projects in his homeland, including the Coorillon canal and dam. O'Brian, who also served as county surveyor of Arapahoe County and city surveyor of Denver, envisioned a forty to fifty foot dam to replace the approximately twenty foot Oasis dam.⁵ O'Brian's plans also called for merging Barr Lake and Oasis Reservoir into one large reservoir, thus impounding more water which the Burlington company could sell to other irrigation systems.⁶

O'Brian's plans faced several obstacles. Because the current dams had insufficient rip-rap, wave action constantly wore away the earthen structures, resulting in costly annual repairs. The Burlington company had to expend large sums of money to simply maintain the reservoir system, leaving little capital with which to build a new dam. The other problem was the low elevational line of the Burlington Ditch which could never fill an enlarged reservoir; water would just back up into the ditch. The Burlington company would have to construct a new feeder ditch along a higher elevational line.

Nevertheless, by January 1903, O'Brian had drawn plans for the enlargement of Oasis Reservoir and Barr Lake, along with the relocation of the Burlington Ditch. But after filing these plans with the State Engineer's Office, the Burlington company never acquired the capital to initiate construction. The company did, however, manage to buy additional land from the Oasis Water Supply Park and Improvement Company to facilitate the enlargement.⁷

Between 1906 and 1909, the Burlington company worked toward having someone else take over the construction of an enlarged reservoir. First, the company tried contracting with Jasper N. Bowles, a Denver-based real estate agent, and T.C. Henry, one of the most aggressive promoter of irrigation in Colorado. Although Henry and Bowles submitted map filings to the State Engineer's Office, a contract never materialized because they could not guarantee the completion of the work to the satisfaction of the Burlington company.⁸ After 1908, the Burlington directors began negotiating with the Farmers Reservoir and Irrigation Company.

CREATION OF THE O'BRIAN CANAL

In 1902, Joseph Standley, Milton Smith, and Thomas B. Croke incorporated the Farmers Reservoir and Irrigation Company. The company was formed with the intention of building an irrigation system which would water lands north of Denver and west of the South Platte River. The plans of the Standley irrigation system were eventually extended to include land east of the South Platte River, in the vicinity of the Burlington Ditch.⁹

The Farmers company was founded by three of Colorado's most prominent businessmen. Joseph Standley was a Colorado pioneer, who had owned several mining interests near Central City. By 1859, he was the owner of the California Mine. He later became involved in various business ventures, including the Denver National Bank and the First National Bank of Central City.¹⁰ Milton Smith came to Colorado in 1889 and was one of Denver's leading attorneys, specializing in mining, corporation, irrigation, and insurance law.¹¹ Thomas B. Croke owned a

furniture store in Denver, as well as a fruit and cattle ranch. In 1911, he was elected as a Colorado state senator.¹²

Standley, Smith, and Croke incorporated FRICO for one million dollars divided into ten thousand shares worth one hundred dollars apiece. In March 1907, FRICO's incorporators formed the Denver Reservoir and Irrigation Company (DRIC) to serve as its construction subsidiary.¹³ On 17 March 1909, W. E. Goldsborough, vice-president and general manager of the Denver Reservoir Irrigation Company, contracted with the Burlington company to enlarge the first 5.43 miles of the Burlington Ditch, and to combine Barr Lake and Oasis Reservoir into one reservoir. Under the agreement, the additional storage capacity was to be given to Goldsborough's company.¹⁴

It was out of this 1909 contract between the Burlington company and the Denver Reservoir and Irrigation Company that the O'Brian Canal emerged. Goldsborough, together with his engineer, George M. Bull, began construction of a new canal which would feed the enlarged reservoir. The new ditch followed the same lines earlier anticipated by Peter O'Brian. This new ditch, which began where the enlargement of the Burlington Ditch ended and extended to the enlarged Barr Lake, was called O'Brian Canal, in honor of Peter O'Brian.

By the spring of 1910, John E. Hayes, an engineer employed by the Arnold Company, which had contracted to work on the FRICO system, had taken over for Bull and had finished nearly all of the construction on the O'Brian Canal. During this time, the Denver Reservoir and Irrigation Company also obtained the Bowles-Buffe Irrigated Land Company. Besides giving the Denver Reservoir and Irrigation Company additional land to irrigate, this agreement cleared any claim Bowles and Henry might have had on a prior right to enlarge the reservoirs, or to construct a feeder ditch similar to the O'Brian Canal.¹⁵

However, in June 1910, before the Denver Reservoir and Irrigation Company could complete its enlargement of Barr Lake and the ditches extending from it, as well as its Standley irrigation system north of Denver and west of the Platte River, the company went bankrupt, a result of over-extending itself. The Trowbridge & Niver Bond Company, which simply could not market the DRIC bonds, also folded. William Kenefick, who owned the Kenefick-Quigley-Russel Construction Company of Kansas City, Missouri, one of the sub-contracting firms involved in the construction, alone owned \$900,000 worth of DRICO bonds. Arthur Day, the receiver in 1911, prevailed upon the Chicago Title and Trust Company to take over the receivership, and to include the Farmers Reservoir Irrigation Company in the receivership. This allowed the Chicago company to merge all of the capital assets of

the Denver company into FRICO. But the financial reorganization did not solve the problem of finishing the construction projects.¹⁶

JOINT OPERATIONS WITH THE HENRYLYN IRRIGATION DISTRICT

At this point, the Henrylyn Irrigation District, which had been formed in 1907, entered into the troubled operations of the Farmers company. Henrylyn district president was Clarence M. Ireland, a prominent insurance man who had extensively engaged in livestock and farming in Weld County.¹⁷ The Henrylyn district owned land in several townships northeast of Barr Lake, and saw that one of the most efficient routes for a feeder ditch to its holdings was the line taken by the Burlington Ditch and the O'Brian Canal. Ireland believed he could reach an agreement with the ailing Farmers company to finish its construction work, with the proviso of allowing the Henrylyn district to enlarge the Burlington Ditch and O'Brian Canal for its own use.

On 10 November 1910, the Henrylyn district and the Kenefick-Quigley-Russel Construction Company entered into a \$3.5 million contract by which the Henrylyn district would complete the FRICO system. The contract, which also called for the completion of a ditch system for the Henrylyn district, was subsequently ratified by FRICO. By March 1911, the Kenefick company had begun enlarging the O'Brian Canal. By February 1912, the company had finished constructing a new headgate system for the now combined diversions of the Burlington Ditch, Reservoir and Land Company; the Farmers Reservoir and Irrigation Company; and the Henrylyn Irrigation District operations. Also completed was the bifurcation structure at Barr Lake, which divided the ditch water between FRICO and Henrylyn.¹⁸

The shared ditch system strained the relationships between the three companies. Henrylyn irrigators suspected the Burlington and Farmers companies of storing their water in Barr Lake. In the summer of 1920, the farmers of the Henrylyn district took matters into their own hands and forcibly closed the gates to Bar Lake, thereby diverting all water into the Denver-Hudson Canal. Farmers from all three systems armed themselves and faced off at the site of the diversion. The Adams County sheriff arrested two farmers, and cooler heads eventually prevailed.¹⁹ The three companies eventually resorted to filing several law suits in local courts, but the expense of litigation led them to seek an alternative solution. On 1 July 1921, an agreement was signed that established the means of the joint operations of the system.

Although modified over time, this 1921 agreement remains much the same today. For the first 5.43 miles of the system, from the headworks to the Burlington/O'Brian bifurcation structure, the Burlington company can divert 350 cubic feet per second (cfs), with an appropriation date of 20 November 1885; FRICO can divert 600 cfs with an appropriation date of 9 March 1908; and the Henrylyn district can divert 300 cfs with an appropriation date of 28 November 1907. From the point of the bifurcation to Barr Lake, the Henrylyn district and FRICO share the O'Brian Canal, with FRICO maintaining a right to divert into the ditch 600 cfs, and the Henrylyn district the right to divert 300 cfs into the ditch.²⁰

The contract also specified the maintenance responsibilities of each party for the various segments of the system. The Farmers company and the Henrylyn district share the expenses of the headworks upkeep, and of the ditch from the headworks to the O'Brian Canal/Denver-Hudson bifurcation structure in a respective ratio of two to one. The contract also bound the Burlington company to reimburse thirty percent of any of FRICO's expenses. This 1921 contract also governs the relationship between the three irrigation companies as to the use and maintenance of the O'Brian Canal.²¹

CANAL LINE AND STRUCTURES

The O'Brian Canal was completed in 1912, and the canal line and structures have remained unchanged from their original design. The canal's concrete diversion dam, headgate, and waste gate were constructed by the Henrylyn Irrigation District in 1911-12 (For a discussion and photographs of the headworks, as well as ditch structures on the Enlarged Burlington, see the Burlington Ditch HAER report, No. CO-45.)

The two bifurcation structures on the O'Brian Canal are also original. The Burlington/O'Brian bifurcation structure was built between 1910 and 1912 of concrete and steel. Two sets of steel gates divert water into either or both the Burlington Ditch and the O'Brian Canal. (See photographs HAER Nos. CO-46-1 and CO-46-2.) The O'Brian/Denver-Hudson bifurcation structure, constructed by 1912, is of similar design, diverting water between the O'Brian Canal and the Denver-Hudson Canal. (See photograph HAER No. CO-46-6.) Both of these bifurcation structures are unaltered, although some of the operators may have been replaced.

Today, the Burlington Ditch, Reservoir and Land Company; the Farmers Reservoir and Irrigation Company; and the Henrylyn Irrigation District uses of the O'Brian Canal have remained unchanged from the uses of over sixty years ago. The Burlington company still takes its direct flow from the canal at the

Burlington/O'Brian bifurcation. The Farmers company still uses the canal to fill Barr Lake; and the Henrylyn district uses it to feed the Denver-Hudson Canal, which irrigates the lands of the district. For nearly seventy years, these three irrigation companies have maintained a relationship, although sometimes contentious, which allows the operation of a very complex web of irrigation ditches and reservoirs. Central and crucial to the operations of all of these systems has always been the O'Brian Canal.

NOTES

1For the location of the irrigation structures mentioned, see: General Map of the Standley Lake Irrigation System, Owned and Operated by the Farmers Reservoir and Irrigation Company, March 1912; and the Brighton, Commerce City, and Sable U.S.G.S. quadrangle maps.

2For the geological information on the Beebe Draw, see: John J. Sampson and Thomas G. Baber, Soil Survey of Adams County, Colorado (Washington, D.C.: Government Printing Office, 1974); and Beebe Draw Diversion and Augmentation Program: Report No. 1, The Water Resources of Beebe Draw (Lakewood, Colorado: Hydro-Triad, Ltd., 1985), pp. II-1-19.

3Beebe Draw Program, p. III-2-3; and Testimony of L. B. Meek, In the Matter of the Adjudication of Priorities for Use of Water for Irrigation and other Beneficial Purposes in Water District No. 2, Irrigation Division No. 1, of the State of Colorado, The Farmers Reservoir and Irrigation Company, v. The Henrylyn Irrigation District (No. 9766), 1:61, Abstract of Record and Assignment of Errors, Colorado Supreme Court.

4"Final Copy: Contract with the Burlington Ditch Company for Enlargement of Barr Lake and the Burlington Canal," 17 March 1909, in FRICO v. Henrylyn.

5O'Brian's name is sometimes given as O'Brien. For biographical information see: Frank Hall, History of the State of Colorado, (Chicago: Blakely Print Co., 1889-95), 4:537; and The Colorado Graphic, 3 (22 October 1887): 1.

6Testimony of Meek, in FRICO v. Henrylyn, 1:61.

7Testimony of Frank P. Bertschy, in FRICO v. Henrylyn, 1:68-72; Testimony of H. C. Lallier, in FRICO v. Henrylyn, 1:141-142; and Map of the Enlargement of Oasis Reservoir and Barr Lake to be known as the Oasis Reservoir, January 1903.

8Testimony of Bertschy, FRICO v. Henrylyn, 1:73-74.

9"The Farmers Reservoir, Irrigation and Reservoir Company," Corporation Files, Colorado Secretary of State, Denver, Colorado.

10Hall, 3:413, 420; Denver Times, 4 June 1899, p. 17, c. 5; and Wilbur Stone, ed., History of Colorado, 1:401.

11Denver Times, 17 November 1902, p. 8; and Hall, 2:260-261.

12Denver Post, 12 Oct. 1939; and Denver Times, 9 August 1898, p. 2, c. 2.

13Beebe Draw Program, III-9.

14"Final Copy: Contract with the Burlington Ditch Company for Enlargement of Barr Lake and the Burlington Canal," 17 March 1909, in FRICO v. Henrylyn.

15Testimony of George M. Bull, in FRICO v. Henrylyn, 1:113-118; Testimony of John E. Hayes, in FRICO v. Henrylyn, 1:30-50; Testimony of W. H. Ferguson, in FRICO v. Henrylyn, 1:93; Testimony of Charles F. Tew, in FRICO v. Henrylyn, 1:153-154; and Beebe Draw Program, p. III-13.

16Testimony of Clarence Ireland, in FRICO v. Henrylyn, 1:226; and Beebe Draw Program, p. III-10-11.

17Stone, 3:802-804; and Denver Post, 31 December 1902. p. 7, c. 3.

18"THIS AGREEMENT, made and entered into this 25th day of November, 1910, by and between THE DENEFFICK CONSTRUCTION COMPANY...and THE HENRYLYN IRRIGATION DISTRICT," Testimony of Clarence Ireland, 1:235-236, and "FINDINGS OF REFEREE AND RECOMMENDED DECREE, Filed October 16, 1915, Ditch No. 49. THE DENVER-HUDSON CANAL," in FRICO v. Henrylyn, 2:458.

19"Ownership of Water in O'Brian Canal Under Controversy," The Brighton (Colo.) Blade, 2 July 1920.

20"Agreement between the Burlington Ditch, Reservoir and Land Company, the Farmers Reservoir and Irrigation Company, and the Henrylyn Reservoir Irrigation District, 1 July 1921," Office Files, Farmers Reservoir and Irrigation Company, Brighton, Colorado.

21Ibid.

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